



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

646.3315

Job Sheet 203834



Part No: 646.3315

Job Qty: 30 pcs

Part Name: Blade



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/28/19

Job Tracking No:

Due Date: 1/12/20

Created By: Jennifer Renwick

Type: Stock

Description:

Note: DWG REV A IPP REV:A NEW ISSUE 12/11/07 JFS VERIFY BY: JLM

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
100	Bandsaw - 1	30 pcs		1/12/20	0.00	1.20	Bandsaw - 1		20/01/20
110	HAAS 4 Axis - B4B	30 pcs		1/12/20	0.51	21.88	HAAS - 1 - B4B		20/01/24
							HAAS - 2 - B4B		
							HAAS - 3 - B4B		
							HAAS - 4 - B4B		
130	QC 8	30 pcs		1/12/20	0.00	0.00	QC 8 - 12		20/01/27
							QC 8 - 14		
							QC 8 - 17		
							QC 8 - 20		
							QC 8 - 25		
							QC 8 - 3		
							QC 8 - 32		
							QC 8 - 33		
							QC 8 - 35		
							QC 8 - 39		
							QC 8 - 4		
							QC 8 - 44		
							QC 8 - 45		
							QC 8 - 49		
							QC 8 - 58		
							QC 8 - 8		
							QC 8 - 9		
							QC 8 - 68		
							QC 8 - 67		
							QC 8 - 1 (A)		
							QC 8 - 47		
							QC 8 - 40		
							QC 8 - 52		
							QC 8 - 23		
							QC 8 - 57		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S248682



Part: 646.3315

Job No: 203834

Serial No/Batch: S248682

Revision:

Inspector:

Exp Date:

Instructions: Various STC's

Date: 01/20/20

			QC 8 - 76		
			QC 8 - 61		
140	Outsource - 1 - Heat Treat	30 pcs	1/12/20		MEI001-VC 15
					2020-01-29
150	Packaging 2-1 - Receive - B4B	30 pcs	1/12/20	0.00 0.00	Packaging 2 - 1 - B4B
					Packaging 2 - 2 - B4B
					Packaging 2 - 3 - B4B
					Packaging 2 - 5 - B4B
					Packaging 2 - 4 - B4B
					Packaging 2 - 6 - B4B
					Packaging 2 - 7 - B4B
					Packaging 2 - 8 - B4B
					Packaging 2 - 9 - B4B
					Packaging 2 - 10 - B4B
					Packaging 2 - 11 - B4B
					Packaging 2 - 12 - B4B
					Packaging 2 - 13 - B4B
					Packaging 2 - 14 - B4B
					Packaging 2 - 15 - B4B
					Packaging 2 - 16 - B4B
					Packaging 2 - 17 - B4B
					Packaging 2 - 18 - B4B
					Packaging 2 - 19 - B4B
					Packaging 2 - 20 - B4B
					Packaging 2 - 21 - B4B
					Packaging 2 - 22 - B4B
					Packaging 2 - 23 - B4B
					Packaging 2 - 24 - B4B
					Packaging 2 - 25 - B4B
					Packaging 2 - 26 - B4B
					Packaging 2 - 27 - B4B
					Packaging 2 - 28 - B4B
					Packaging 2 - 29 - B4B
					Packaging 2 - 30 - B4B
					Packaging 2 - 31 - B4B
					Packaging 2 - 32 - B4B
					Packaging 2 - 33 - B4B
					Packaging 2 - 34 - B4B
					Packaging 2 - 35 -

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				B4B	
				Packaging 2 - 36 - B4B	
155	QC 6	30 pcs	1/12/20	0.00 0.00	QC 6 - 9
				QC 6 - 68	DAS 68
				QC 6 - 61	FEB 04 2020 9-89
				QC 6 - 40	
				QC 6 - 81	
160	Spray Paint - 2 - B4B	30 pcs	1/12/20	0.00 1.02	Spray Paint - 1 - B4B
				Spray Paint - 2 - B4B	DAS 41 FEB 05 2020 3-89
				Spray Paint - 3 - B4B	
				Spray Paint - 4 - B4B	
170	QC 14	30 pcs	1/12/20	0.00 0.00	QC 14 - 15
				QC 14 - 2	
				QC 14 - 34	
				QC 14 - 41	
				QC 14 - 51	
				QC 14 - 58	
				QC 14 - 59	
				QC 14 - 9	
				QC 14 - 68	
				QC 14 - 40	DAS 82
				QC 14 - 19	9-89
				QC 14 - 43	
				QC 14 - 24	
				QC 14 - 61	FEB 10 2020
				QC 14 - 81	
180	Packaging 3-1 - Stock - B4B	30 pcs	1/12/20	0.00 0.00	Packaging 3 - 1 - B4B
				Packaging 3 - 2 - B4B	
				Packaging 3 - 3 - B4B	DAS 74
				Packaging 3 - 4 - B4B	CC/102 FEB 12 2020 9-89
				Packaging 3 - 5 - B4B	
				Packaging 3 - 6 - B4B	
				Packaging 3 - 7 - B4B	
				Packaging 3 - 8 - B4B	
				Packaging 3 - 9 - B4B	
				Packaging 3 - 10 - B4B	
				Packaging 3 - 11 - B4B	
				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
					Plex 11/28/19 8:26 AM Dart.Renwick.Jennife

					Packaging 3 - 23 - B4B	
					Packaging 3 - 24 - B4B	
					Packaging 3 - 25 - B4B	
					Packaging 3 - 26 - B4B	
					Packaging 3 - 27 - B4B	
					Packaging 3 - 28 - B4B	
					Packaging 3 - 29 - B4B	
					Packaging 3 - 30 - B4B	
					Packaging 3 - 31 - B4B	
					Packaging 3 - 32 - B4B	
					Packaging 3 - 33 - B4B	
					Packaging 3 - 34 - B4B	
					Packaging 3 - 35 - B4B	
					Packaging 3 - 36 - B4B	
190 QC 21 - SA	30 pcs	1/12/20	0.00	0.00	QC 21 - SA - 21	DAS
					QC 21 - SA - 70	21
					QC 21 - SA - 53	9.89

Part Op 100 - (Bandsaw) Cut Blank at 2.600"

Descriptions: 110 - HAAS1-1 (HAAS CNC Vertical Machine) 1-Machine per folio FB147

FEB 12 2020

130 - (QC8- Inspect parts - second check)

140 - HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED

150 - (Receive & Inspect for Damage & Mat'l Certs)

155 - (QC6- All purchased or subcontracted products)

160 - (Spray Paint / NDT Room) PRIME AS PER DWG, SEE NOTE #4 5236137

170 - (QC14- Inspect Spray Paint)

180 - ***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***

190 - (QC21- Final Inspection - Work Order Release)

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MSTEEL-A2-B0.500X1.250	AISI A2 Tool Steel Bar, 0.500 X 1.250	6.5100 ft (.217 ea)	100-Bandsaw - 1	S232654

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
100-Bandsaw - 1	MSTEEL-A2-B0.500X1.250	7	77	0

Part Specifications					
Spec No	Description	Target/Tolerance	Limits	Type	Special Comments
1	Blade	0.325inches $\pm$ 0.005	0.330 0.320	.326	
2	Blade	30.000Degrees $\pm$ 0.500	30.500 29.500	30°	Angle
3	Blade	0.375inches $\pm$ 0.005	0.380 0.370	.375	
4	Blade	2.460inches $\pm$ 0.010	2.470 2.450	2.456	
5	Blade	1.817inches $\pm$ 0.005	1.822 1.812	1.820	
6	Blade	1.192inches $\pm$ 0.002	1.194 1.190	1.192	
7	Blade	0.250inches $\pm$ 0.002	0.252 0.248	.2505	
8	Blade	0.256inches $\pm$ 0.002	0.258 0.254	.256	
9	Blade	0.290inches $\pm$ 0.002	0.292 0.288	.291	
10	Blade	0.940inches $\pm$ 0.010	0.950 0.930	.939	
11	Blade	0.177inches + 0.005 - 0.001	0.182 0.176	.176	Diameter
12	Blade	55.600Degrees $\pm$ 0.500	56.100 55.100	55.7	Angle

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Entered: _____ Date: _____



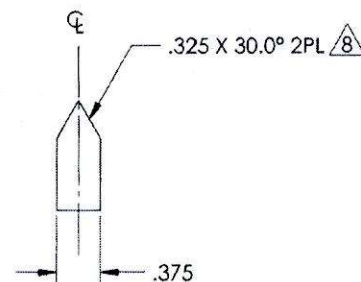
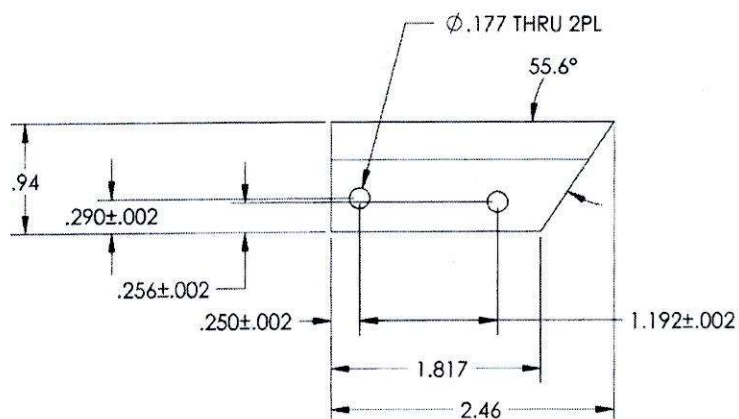
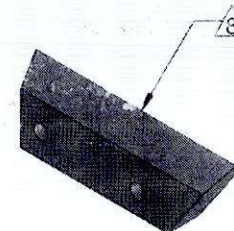
WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐	DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐			
Date :	Sequence #:	QTY Affected :		MRB (QSI042)	
Description Work Order Deviation		Disposition		Completed By Lead hand / Supervisor QC / QA Coordinator	
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Presservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐		FAULT CATEGORY ☐ Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread			
		Other/Details:			

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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



646.3315

ORIGINAL DATE (DD-MY-YY) 08-28-08	3030 ENTERPRISE CT., SUITE A VISTA, CA 92081 (760) 724-5300
DESIGNED BY S. HUBB	APICAL INDUSTRIES, INC. AEROSPACE
DRAWING APPROVAL P. BRAYO	646.3300
CONTRACT NO.	UPPER CUTTER ASSY
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES 3 PLACES DECIMALS 1/16 1/32 1/64 ANGLES 1/2°	REV A
SCALE NONE	SHEET 7 OF 8



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER

POHB045724



Supplier: MEI001-VC
Metcor Inc.
560 Boul. Arthur Sauve
Saint-Eustache
QC
J7R 5A8 Canada
Phone: 450 473 1884
Fax: 450 491 5498

Attention: Bejenaru, Livia

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB045724

PO Date: 1/29/20

Due Date: 2/14/20

Purchase Order

Revision:

Revision Date:

Ship-To Contact: Guerin, Kimberley
Phone: 613-632-5200 Ext: 298
kguerin@dartaero.com

Via: Ground

Pynt Terms: Net 30

Freight Terms:

Special Comments:

E-MAILED
2020-01-30

Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	203834	646.3315	646.3300 Rev A	Blade : Various STC's HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed X30	-	2/14/20	30 pcs	0 pcs	30 pcs	\$2.1202/pcs	\$63.61

FEB 04 2020

DAS
68
9-89



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PURCHASE ORDER

POHB045724



Items												
Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
2	203833	646.3314	646.3300 Rev A	Blade : Various STC's HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL	Firmed x30	-	2/14/20	30 pcs	0 pcs	30 pcs	\$2.1202/pcs	\$63.61
											FEB 04 2020	
3	205051	646.9711	646.9700 Rev H	Blade : Various STC's (Outsource process - Heat Treat) PO to Metcor: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed x68	-	2/14/20	68 pcs	0 pcs	68 pcs	\$2.1202/pcs	\$144.17
											FEB 04 2020	



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Tel (613) 632-5200

PURCHASE ORDER

POHB045724



Items

Line Item	Job	Part	Drawing	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
4	203835	646.3316	646.3300 Rev A	Blade : Various STC's HEAT TREAT AS PER DWG 646.3300 FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED	Firmed X 30	-	2/14/20	30 pcs	0 pcs	30 pcs	\$2.1202/pcs	\$63.61

FEB 04 2020

Grand Total: \$334.99

Order Notes

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 1/30/20 4:50 PM Dart.Guerin.Kimberley

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
342581	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
HB045724	N/A	A2		
<u>SPÉCIFICATIONS DU PROCÉDÉ</u> processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed		RÉSULTATS DE TESTS / results	
HARDNESS	58 - 62 HRC		13 (907)	59 - 61 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
158	48	646.3315 ✓ (30) 646.3315 REV A JOB 203834 (30) 646.3314 REV A ✓ JOB 203833 (68) 646.9711 REV H ✓ JOB 205051 (30) 646.3316 REV A ✓ JOB 203835 3 = 1 SAC + 1 BC		

RECEIVED

FEB 03 2020

DART AEROSPACE LTD.

COMMENTAIRES / comments

VAC HARDEN 1800°F - 1:00 HRE
DOUBLE TEMPER 400°F - 1:00 HRE

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

This document and any attached documents may contain confidential or proprietary information and may be subject to export

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détaillé

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BON DE TRAVAIL order	CHARGEMENT load
342581	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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APPROUVÉ par / Approved by:

DATE: 2020-02-03

Lucie Desmarais
QA Technician

